



Executive Summary for the Environmental Protection Agency Leadership in Energy and Environmental Design (LEED) for Homes A Demonstration Project: September 2005 through August 2007

The Center for Ecological Technology (CETSM) is pleased to report on our involvement in the Leadership in Energy & Environmental Design (LEED) for Homes program. The Environmental Protection Agency's (EPA) support has allowed us to encourage more widespread use of green building construction and design in western Massachusetts and subsequently work towards our goal of long-term environmental, health and economic benefits for the region, as well as serve as a model for other regions.

LEED for Homes Pilot

The LEED® (Leadership in Energy and Environmental Design) Green Building Rating System™ is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings. Members of the U.S. Green Building Council representing all segments of the building industry developed LEED and continue to contribute to its evolution.

In May 2005, the US Green Building Council (USGBC) issued a Request For Proposals seeking Program Providers to launch and field test the LEED for Homes rating system. Nationally, the USGBC selected service providers in 11 states and the Northeast Region. The Northeast Team is comprised of 7 established and experienced energy businesses/organizations serving 5 states within EPA's Region I.

Purpose

The largest and most active area of green building has been in the residential market. Based on the success of the USGBC's LEED standard for new commercial construction rating system (LEED-NC), LEED for Homes will target the residential market, beginning with the top 25% of homebuilders (innovators and market leaders) who build homes incorporating best-practice environmental features. When the Pilot is completed, LEED for Homes Rating System will become part of the comprehensive suite of LEED assessment tools offered by the USGBC to promote sustainable design, construction and operations practices in buildings nationwide. Project partners will incorporate their experiences and lessons to the marketplace for LEED certified homes. Further, this project may impact other public policy efforts including voluntary or required building to LEED standards for municipal buildings.

Need

Western Massachusetts has experienced a new home building "boom" - between 1995 and 2002; new housing starts in Berkshire County increased by over 63%, even as the population declines. In 2002, 459 residential building permits were authorized and permit applications continue to be requested. Architects, builders and homeowners frequently contact CET to find out ways to build "greener" homes. Conversely, if and when the opportunity to influence a new building is lost, the harmful environmental impacts, public and occupant health impacts, and increased costs for energy, water and other natural resources extend for many years to come.

Thousands of builders have not had access to a strong green building initiative that provides third party verification, comprehensive education and national recognition. One goal of the pilot is to identify and generate a receptive audience among builders and provide them with the tools and training to be successful.

FACTS & KEY FINDINGS

Recruitment & Public Awareness

- Enrollment increased over the pilot from 4 projects in 2005 to 18 new projects in 2007
- Most enrollments came through www.usgbc.org, the Massachusetts Technology Collaborative small renewable grant program, and CET's participation in the ENERGY STAR homes program

Certification

- 4 of 9 projects with completed preliminary ratings seek to achieve a gold or platinum certification
- 1 out of 18 projects currently enrolled are being built by an affordable housing developer
- 13 of 18 projects currently enrolled are building custom homes
- Most early pilot projects took longer to achieve certification than expected

Technical Assistance Training

- CET taught or assisted with 5 trainings relating to LEED over the project time frame
- Interest was strong for these training opportunities

Environmental Impact

- 53-74% less waste than the national average was created at 3 of the 4 early pilot homes
- 6,000 to 13,000 gallons of water saved annually with high efficiency toilets, faucets & showerheads
- Nearly 300 MMBtu's/year of energy will be saved

CET has been able to identify obstacles to certification, create process to address these concerns and communicate directly with the USGBC about the development of the rating system. This opportunity to create greater market awareness and begin the technical training process with builders has increased our ability to make significant gains in reducing the environmental impact of residential new construction. Developing models and skilled leaders in the residential design and construction market will be an important aspect of shifting the industry to more sustainable practices.